

between the United States, the United Kingdom, the Federal Republic of Germany, France, Italy, Canada, and Japan, announced on April 16, 1987, to restrict sensitive missile-relevant transfers based on the MTCR Annex, and any amendments thereto;

(b) The term *MTCR Annex* means the Guidelines and Equipment and Technology Annex of the MTCR, and any amendments thereto;

(c) *List of all items on the MTCR Annex*. Section 71(a) of the Arms Export Control Act (22 U.S.C. § 2797) refers to the establishment as part of the U.S. Munitions List of a list of all items on the MTCR Annex, the export of which is not controlled under section 6(l) of the Export Administration Act of 1979 (50 U.S.C. app. 2405(l)), as amended. In accordance with this provision, the list of MTCR Annex items shall constitute all items on the U.S. Munitions List in § 121.16 of this subchapter.

PART 121—THE UNITED STATES MUNITIONS LIST

ENUMERATION OF ARTICLES

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AUTHORITY: Secs. 2, 38, and 71, Pub. L. 90-629 Arms Export Control Act, 90 Stat. 744 (22 U.S.C. 2752, 2778, 2797); E.O. 11958, 42 FR 4311; 22 U.S.C. 2658.

SOURCE: 58 FR 39287, July 22, 1993, unless otherwise noted.

ENUMERATION OF ARTICLES

§ 121.1 General. The United States Munitions List.

(a) The following articles, services and related technical data are designated as defense articles and defense services pursuant to sections 38 and 47(7) of the Arms Export Control Act (22 U.S.C. 2778 and 2794(7)). Changes in designations will be published in the FEDERAL REGISTER. Information and clarifications on whether specific items are defense articles and services under this subchapter may appear periodically in the Defense Trade News published by the Center for Defense Trade.

(b) Significant military equipment: An asterisk precedes certain defense articles in the following list. The asterisk means that the article is deemed to be “significant military equipment” to the extent specified in § 120.19. The asterisk is placed as a convenience to help identify such articles.

(c) Missile Technology Control Regime Annex (MTCR). Certain defense articles and services are identified in § 121.16 as being on the list of MTCR Annex items on the United States Munitions List. These are articles as specified in § 120.29 of this subchapter and appear on the list at § 121.16.

CATEGORY I—FIREARMS

*(a) Nonautomatic, semi-automatic and fully automatic firearms to caliber .50 inclusive, and all components and parts for such firearms. (See § 121.9 and §§ 123.16–123.19 of this subchapter.)

(b) Riflescopes manufactured to military specifications, and specifically designed or modified components therefor; firearm silencers and suppressors, including flash suppressors.

*(c) Insurgency-counterinsurgency type firearms or other weapons having a special military application (e.g. close assault weapons systems) regardless of caliber and all components and parts therefor.

(d) Technical data (as defined in § 120.21 of this subchapter) and defense services (as defined in § 120.8 of this subchapter) directly related to the defense articles enumerated in paragraphs (a) through (c) of this category. (See § 125.4 of this subchapter for exemptions.) Technical data directly related to the manufacture or production of any defense articles enumerated elsewhere in this category that are designated as Significant Military Equipment (SME) shall itself be designated SME.

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CATEGORY II—ARTILLERY PROJECTORS

* (a) Guns over caliber .50, howitzers, mortars, and recoilless rifles.

* (b) Military flamethrowers and projectors.

(c) Components, parts, accessories and attachments for the articles in paragraphs (a) and (b) of this category, including but not limited to mounts and carriages for these articles.

(d) Technical data (as defined in § 120.21 of this subchapter) and defense services (as defined in § 120.8 of this subchapter) directly related to the defense articles enumerated in paragraphs (a) through (c) of this category. (See § 125.4 of this subchapter for exemptions.) Technical data directly related to the manufacture or production of any defense articles enumerated elsewhere in this category that are designated as Significant Military Equipment (SME) shall itself be designated SME.

CATEGORY III—AMMUNITION

* (a) Ammunition for the arms in Categories I and II of this section. (See § 121.6.)

(b) Components, parts, accessories, and attachments for articles in paragraph (a) of this category, including but not limited to cartridge cases, powder bags, bullets, jackets, cores, shells (excluding shotgun shells), projectiles, boosters, fuzes and components therefor, primers, and other detonating devices for such ammunition. (See § 121.6.)

(c) Ammunition belting and linking machines.

* (d) Ammunition manufacturing machines and ammunition loading machines (except handloading ones).

(e) Technical data (as defined in § 120.21 of this subchapter) and defense services (as defined in § 120.8 of this subchapter) directly related to the defense articles enumerated in paragraphs (a) through (d) of this category. (See § 125.4 of this subchapter for exemptions.) Technical data directly related to the manufacture or production of any defense articles enumerated elsewhere in this category that are designated as Significant Military Equipment (SME) shall itself be designated SME.

CATEGORY IV—LAUNCH VEHICLES, GUIDED MISSILES, BALLISTIC MISSILES, ROCKETS, TORPEDOES, BOMBS AND MINES

* (a) Rockets (including but not limited to meteorological and other sounding rockets), bombs, grenades, torpedoes, depth charges, land and naval mines, as well as launchers for such defense articles, and demolition blocks and blasting caps. (See § 121.11.)

* (b) Launch vehicles and missile and anti-missile systems including but not limited to guided, tactical and strategic missiles, launchers, and systems.

(c) Apparatus, devices, and materials for the handling, control, activation, monitor-

ing, detection, protection, discharge, or detonation of the articles in paragraphs (a) and (b) of this category. (See § 121.5.)

* (d) Missile and space launch vehicle powerplants.

* (e) Military explosive excavating devices.

* (f) Ablative materials fabricated or semifabricated from advanced composites (e.g., silica, graphite, carbon, carbon/carbon, and boron filaments) for the articles in this category that are derived directly from or specifically developed or modified for defense articles.

* (g) Non/nuclear warheads for rockets and guided missiles.

(h) All specifically designed or modified components, parts, accessories, attachments, and associated equipment for the articles in this category.

(i) Technical data (as defined in § 120.21 of this subchapter) and defense services (as defined in § 120.8 of this subchapter) directly related to the defense articles enumerated in paragraphs (a) through (h) of this category. (See § 125.4 of this subchapter for exemptions.) Technical data directly related to the manufacture or production of any defense articles enumerated elsewhere in this category that are designated as Significant Military Equipment (SME) shall itself be designated SME.

CATEGORY V—EXPLOSIVES, PROPELLANTS, INCENDIARY AGENTS, AND THEIR CONSTITUENTS

* (a) Military explosives. (See § 121.12.)

* (b) Military fuel thickeners. (See § 121.13.)

(c) Propellants for the articles in Categories III and IV of this section. (See § 121.14.)

(d) Military pyrotechnics, except pyrotechnic materials having dual military and commercial use.

(e) All compounds specifically formulated for the articles in this category.

(f) Technical data (as defined in § 120.21 of this subchapter) and defense services (as defined in § 120.8 of this subchapter) directly related to the defense articles enumerated in paragraphs (a) through (e) of this category. (See § 125.4 of this subchapter for exemptions.) Technical data directly related to the manufacture or production of any defense articles enumerated elsewhere in this category that are designated as Significant Military Equipment (SME) shall itself be designated SME.

CATEGORY VI—VESSELS OF WAR AND SPECIAL NAVAL EQUIPMENT.

* (a) Warships, amphibious warfare vessels, landing craft, mine warfare vessels, patrol vessels and any vessels specifically designed or modified for military purposes. (See § 121.15.)

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(b) Patrol craft without armor, armament or mounting surfaces for weapon systems more significant than .50 caliber machine guns or equivalent and auxiliary vessels. (See § 121.15.)

*(c) Turrets and gun mounts, arresting gear, special weapons systems, protective systems, submarine storage batteries, catapults, mine sweeping equipment (including mine countermeasures equipment deployed by aircraft) and other significant naval systems specifically designed or modified for combatant vessels.

(d) Harbor entrance detection devices (magnetic, pressure, and acoustic) and controls therefor.

*(e) Naval nuclear propulsion plants, their land prototypes, and special facilities for their construction, support, and maintenance. This includes any machinery, device, component, or equipment specifically developed, designed or modified for use in such plants or facilities. (See § 123.20)

(f) All specifically designed or modified components, parts, accessories, attachments, and associated equipment for the articles in paragraphs (a) through (e) of this category.

(g) Technical data (as defined in § 120.10) and defense services (as defined in § 120.9) directly related to the defense articles enumerated in paragraphs (a) through (f) of this category. (See § 125.4 for exemptions.) Technical data directly related to the manufacture or production of any defense articles enumerated elsewhere in this category that are designated as Significant Military Equipment (SME) shall itself be designated SME.

CATEGORY VII—TANKS AND MILITARY VEHICLES

*(a) Military type armed or armored vehicles, military railway trains, and vehicles specifically designed or modified to accommodate mountings for arms or other specialized military equipment or fitted with such items.

*(b) Military tanks, combat engineer vehicles, bridge launching vehicles, half-tracks and gun carriers.

*(c) Self-propelled guns and howitzers.

(d) Military trucks, trailers, hoists, and skids specifically designed, modified, or equipped to mount or carry weapons of Categories I, II and IV or for carrying and handling the articles in paragraph (a) of Categories III and IV.

*(e) Military recovery vehicles.

*(f) Amphibious vehicles. (See § 121.4)

*(g) Engines specifically designed or modified for the vehicles in paragraphs (a), (b), (c), and (f) of this category.

(h) All specifically designed or modified components and parts, accessories, attachments, and associated equipment for the articles in this category, including but not limited to military bridging and deep water fording kits.

(i) Technical data (as defined in § 120.21 of this subchapter) and defense services (as defined in § 120.8 of this subchapter) directly related to the defense articles enumerated in paragraphs (a) through (h) of this category. (See § 125.4 of this subchapter for exemptions.) Technical data directly related to the manufacture or production of any defense articles enumerated elsewhere in this category that are designated as Significant Military Equipment (SME) shall itself be designated SME.

CATEGORY VIII—AIRCRAFT AND ASSOCIATED EQUIPMENT

*(a) Aircraft, including but not limited to helicopters, non-expansive balloons, drones, and lighter-than-air aircraft, which are specifically designed, modified, or equipped for military purposes. This includes but is not limited to the following military purposes: Gunnery, bombing, rocket or missile launching, electronic and other surveillance, reconnaissance, refueling, aerial mapping, military liaison, cargo carrying or dropping, personnel dropping, airborne warning and control, and military training. (See § 121.3.)

*(b) Military aircraft engines, except reciprocating engines, specifically designed or modified for the aircraft in paragraph (a) of this category.

*(c) Cartridge-actuated devices utilized in emergency escape of personnel and airborne equipment (including but not limited to airborne refueling equipment) specifically designed or modified for use with the aircraft and engines of the types in paragraphs (a) and (b) of this category.

(d) Launching and recovery equipment for the articles in paragraph (a) of this category, if the equipment is specifically designed or modified for military use. Fixed land-based arresting gear is not included in this category.

*(e) Inertial navigation systems, aided or hybrid inertial navigation systems, Inertial Measurement Units (IMUs), and Attitude and Heading Reference Systems (AHRS) specifically designed, modified, or configured for military use and all specifically designed components, parts and accessories. For other inertial reference systems and related components refer to Category XII(d).

(f) Developmental aircraft, engines, and components thereof specifically designed, modified, or equipped for military uses or purposes, or developed principally with U.S. Department of Defense funding, excluding such aircraft, engines, and components subject to the jurisdiction of the Department of Commerce.

NOTE: Developmental aircraft, engines, and components thereof, having no commercial application at the time of this amendment

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and which have been specifically designed for military uses or purposes, or developed principally with U.S. Department of Defense funding, will be considered eligible for a CCL license when actually applied to a commercial aircraft or commercial aircraft engine program. Exporters may seek to establish commercial application either on a case-by-case basis through submission of documentation demonstrating application to a commercial program in requesting an export license application from Commerce in respect of a specific export or, in the case of use for broad categories of aircraft, engines, or components, a commodity jurisdiction from State.

(g) Ground effect machines (GEMS) specifically designed or modified for military use, including but not limited to surface effect machines and other air cushion vehicles, and all components, parts, and accessories, attachments, and associated equipment specifically designed or modified for use with such machines.

(h) Components, parts, accessories, attachments, and associated equipment (including ground support equipment) specifically designed or modified for the articles in paragraphs (a) through (e) of this category, excluding aircraft tires and propellers used with reciprocating engines.

(i) Technical data (as defined in § 120.10) and defense services (as defined in § 120.9) directly related to the defense articles enumerated in paragraphs (a) through (h) of this category (see § 125.4 for exemptions), except for hot section technical data associated with commercial aircraft engines. Technical data directly related to the manufacture or production of any defense articles enumerated elsewhere in this category that are designated as Significant Military Equipment (SME) shall itself be designated SME.

CATEGORY IX—MILITARY TRAINING EQUIPMENT

(a) Military training equipment including but not limited to attack trainers, radar target trainers, radar target generators, gunnery training devices, antisubmarine warfare trainers, target equipment, armament training units, operational flight trainers, air combat training systems, radar trainers, navigation trainers, and simulation devices related to defense articles.

(b) Components, parts, accessories, attachments, and associated equipment specifically designed or modified for the articles in paragraph (a) of this category.

(c) Technical Data (as defined in § 120.21 of this subchapter) and defense services (as defined in § 120.8 of this subchapter) directly re-

lated to the defense articles enumerated in paragraphs (a) and (b) of this category. (See § 125.4 for exemptions.).

CATEGORY X—PROTECTIVE PERSONNEL EQUIPMENT

(a) Body armor specifically designed, modified or equipped for military use; articles, including but not limited to clothing, designed, modified or equipped to protect against or reduce detection by radar, infrared (IR) or other sensors; military helmets equipped with communications hardware, optical sights, slewing devices or mechanisms to protect against thermal flash or lasers, excluding standard military helmets.

(b) Partial pressure suits and liquid oxygen converters used in aircraft in Category VIII(a).

(c) Protective apparel and equipment specifically designed or modified for use with the articles in paragraphs (a) through (d) in Category XIV.

(d) Components, parts, accessories, attachments, and associated equipment specifically designed or modified for use with the articles in paragraphs (a), (b), and (c) of this category.

(e) Technical Data (as defined in § 120.21 of this subchapter) and defense services (as defined in § 120.8 of this subchapter) directly related to the defense articles enumerated in paragraphs (a) through (d) of this category. (See § 125.4 of this subchapter for exemptions.)

CATEGORY XI—MILITARY ELECTRONICS

(a) Electronic equipment not included in Category XII of the U.S. Munitions List which is specifically designed, modified or configured for military application. This equipment includes but is not limited to:

(1) Underwater sound equipment to include active and passive detection, identification, tracking, and weapons control equipment.

(2) Underwater acoustic active and passive countermeasures and counter-countermeasures.

(3) Radar systems, with capabilities such as:

- (i) Search,
- (ii) Acquisition,
- (iii) Tracking,
- (iv) Moving target indication,
- (v) Imaging radar systems,

(vi) Any ground air traffic control radar which is specifically designed or modified for military application.

(4) Electronic combat equipment, such as:

- (i) Active and passive countermeasures,
- (ii) Active and passive counter-countermeasures, and
- (iii) Radios (including transceivers) specifically designed or modified to interfere with

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other communication devices or transmissions.

* (5) Command, control and communications systems to include radios (transceivers), navigation, and identification equipment.

(6) Computers specifically designed or developed for military application and any computer specifically modified for use with any defense article in any category of the U.S. Munitions List.

(7) Any experimental or developmental electronic equipment specifically designed or modified for military application or specifically designed or modified for use with a military system.

* (b) Electronic systems or equipment specifically designed, modified, or configured for intelligence, security, or military purposes for use in search, reconnaissance, collection, monitoring, direction-finding, display, analysis and production of information from the electromagnetic spectrum and electronic systems or equipment designed or modified to counteract electronic surveillance or monitoring. A system meeting this definition is controlled under this subchapter even in instances where any individual pieces of equipment constituting the system may be subject to the controls of another U.S. Government agency. Such systems or equipment described above include, but are not limited to, those:

(1) Designed or modified to use cryptographic techniques to generate the spreading code for spread spectrum or hopping code for frequency agility. This does not include fixed code techniques for spread spectrum.

(2) Designed or modified using burst techniques (e.g., time compression techniques) for intelligence, security or military purposes.

(3) Designed or modified for the purpose of information security to suppress the compromising emanations of information-bearing signals. This covers TEMPEST suppression technology and equipment meeting or designed to meet government TEMPEST standards. This definition is not intended to include equipment designed to meet Federal Communications Commission (FCC) commercial electro-magnetic interference standards or equipment designed for health and safety.

(c) Components, parts, accessories, attachments, and associated equipment specifically designed or modified for use with the equipment in paragraphs (a) and (b) of this category, except for such items as are in normal commercial use.

(d) Technical data (as defined in § 120.21) and defense services (as defined in § 120.8) directly related to the defense articles enumerated in paragraphs (a) through (c) of this category. (See § 125.4 for exemptions.) Technical data directly related to the manufacture or production of any defense articles

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enumerated elsewhere in this category that are designated as Significant Military Equipment (SME) shall itself be designated as SME.

CATEGORY XII—FIRE CONTROL, RANGE FINDER, OPTICAL AND GUIDANCE AND CONTROL EQUIPMENT

* (a) Fire control systems; gun and missile tracking and guidance systems; gun range, position, height finders, spotting instruments and laying equipment; aiming devices (electronic, optic, and acoustic); bomb sights, bombing computers, military television sighting and viewing units, and periscopes for the articles of this section.

* (b) Lasers specifically designed, modified or configured for military application including those used in military communication devices, target designators and range finders, target detection systems, and directed energy weapons.

* (c) Infrared focal plane array detectors specifically designed, modified or configured for military use; image intensification and other night sighting equipment or systems specifically designed, modified, or configured for military use; second generation and above military image intensification tubes (defined below) specifically designed, developed, modified or configured for military use, and infrared, visible and ultraviolet devices specifically designed, developed, modified, or configured for military application. Military second and third generation image intensification tubes and military infrared focal plane arrays identified in this subparagraph are licensed by the Department of Commerce (ECCN 6A02A and 6A03A) when a part of a commercial system (i.e. those systems originally designed for commercial use). This does not include any military system comprised of non-military specification components. Replacement tubes or focal plane arrays identified in this paragraph being exported for commercial systems are subject to the controls of the ITAR.

NOTE: *Special Definition.* For purposes of this subparagraph, *second and third generation image intensification tubes* are defined as having:

A peak response within the 0.4 to 1.05 micron wavelength range and incorporating a microchannel plate for electron image amplification having a hold pitch (center-to-center spacing) of less than 25 microns and having either:

(a) An S-20, S-25 or multialkali photocathode; or

(b) A GaAs, GaInAs, or other compound semiconductor photocathode.

* (d) Inertial platforms and sensors for weapons or weapon systems; guidance, control and stabilization systems except for those systems covered in Category VIII;

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astro-compasses and star trackers and military accelerometers and gyros. For aircraft inertial reference systems and related components refer to Category VIII.

(e) Components, parts, accessories, attachments and associated equipment specifically designed or modified for the articles in paragraphs (a) through (d) of this category, except for such items as are in normal commercial use.

(f) Technical data (as defined in §120.21) and defense services (as defined in §120.8) directly related to the defense articles enumerated in paragraphs (a) through (e) of this category. (See §125.4 for exemptions.) Technical data directly related to manufacture and production of any defense articles enumerated elsewhere in this category that are designated as Significant Military Equipment (SME) shall itself be designated as SME.

CATEGORY XIII—AUXILIARY MILITARY EQUIPMENT

(a) Cameras and specialized processing equipment therefor, photointerpretation, stereoscopic plotting, and photogrammetry equipment which are specifically designed or modified for military purposes, and components specifically designed or modified therefor;

(b) Military Information Security Systems and equipment, cryptographic devices, software, and components specifically designed or modified therefor (i.e., such items when specifically designed, developed, configured, adapted or modified for military applications (including command, control and intelligence applications)). This includes:

(1) Military cryptographic (including key management) systems, equipment, assemblies, modules, integrated circuits, components or software with the capability of maintaining secrecy or confidentiality of information or information systems, except cryptographic equipment and software as follows:

(i) Tracking, telemetry and control (TT&C) encryption/decryption when embedded in a commercial communications satellite identified in ECCN 9A004a of the Export Administration Regulations; embedded means that the device or system cannot feasibly be removed from the satellite and that it cannot be used for other purposes.

(2) Military cryptographic (including key management) systems, equipment, assemblies, modules, integrated circuits, components of software which have the capability of generating

spreading or hopping codes for spread spectrum systems or equipment.

(3) Military cryptanalytic systems, equipment, assemblies, modules, integrated circuits, components or software.

(4) Military systems, equipment, assemblies, modules, integrated circuits, components or software providing certified or certifiable multi-level security or user isolation exceeding class B2 of the Trusted Computer System Evaluation Criteria (TCSEC) and software to certify such systems, equipment or software.

(5) Ancillary equipment specifically designed or modified for paragraphs (b) (1), (2), (3), and (4) of this category.

(c) Self-contained diving and underwater breathing apparatus as follows:

(1) Closed and semi-closed circuits (rebreathing) apparatus;

(2) Specially designed components for use in the conversion of open-circuit apparatus to military use; and

(3) Articles exclusively designed for military use with self-contained diving and underwater swimming apparatus.

(d) Carbon/carbon billets and preforms which are reinforced with continuous unidirectional tows, tapes, or woven cloths in three or more dimensional planes (i.e. 3D, 4D, etc.). This is exclusive of carbon/carbon billets and preforms where reinforcement in the third dimension is limited to interlocking of adjacent layers only, and carbon/carbon 3D, 4D, etc. end items which have not been specifically designed or modified for defense articles (e.g., brakes for commercial aircraft or high speed trains). Armor (e.g., organic, ceramic, metallic), and reactive armor which has been specifically designed or modified for defense articles. Structural materials including carbon/carbon and metal matrix composites, plate, forgings, castings, welding consumables and rolled and extruded shapes which have been specifically designed or modified for defense articles.

(e) Concealment and deception equipment, including but not limited to special paints, decoys, and simulators and components, parts and accessories specifically designed or modified therefor.

(f) Energy conversion devices for producing electrical energy from nuclear, thermal, or solar energy, or from chemical reaction which are specifically designed or modified for military application.

(g) Chemiluminescent compounds and solid state devices specifically designed or modified for military application.

(h) Devices embodying particle beam and electromagnetic pulse technology and associated components and subassemblies (e.g.,

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ion beam current injectors, particle accelerators for neutral or charged particles, beam handling and projection equipment, beam steering, fire control, and pointing equipment, test and diagnostic instruments, and targets) which are specifically designed or modified for directed energy weapon applications.

(i) Metal embrittling agents.

* (j) Hardware and equipment, which has been specifically designed or modified for military applications, that is associated with the measurement or modification of system signatures for detection of defense articles. This includes but is not limited to signature measurement equipment; prediction techniques and codes; signature materials and treatments; and signature control design methodology.

(k) Technical data (as defined in § 120.21 of this subchapter) and defense services (as defined in § 120.8 of this subchapter) related to the defense articles listed in this category. (See § 125.4 of this subchapter for exemptions; see also § 123.21 of this subchapter). Technical data directly related to the manufacture or production of any defense articles enumerated elsewhere in this category that are designated as Significant Military Equipment (SME) shall itself be designated as SME.

CATEGORY XIV—TOXICOLOGICAL AGENTS AND EQUIPMENT AND RADIOLOGICAL EQUIPMENT

* (a) Chemical agents, including but not limited to lung irritants, vesicants, lachrymators, tear gases (except tear gas formulations containing 1% or less CN or CS), sternutators and irritant smoke, and nerve gases and incapacitating agents. (See § 121.7.)

* (b) Biological agents.

* (c) Equipment for dissemination, detection, and identification of, and defense against, the articles in paragraphs (a) and (b) of this category.

* (d) Nuclear radiation detection and measuring devices, manufactured to military specification.

(e) Components, parts, accessories, attachments, and associated equipment specifically designed or modified for the articles in paragraphs (c) and (d) of this category.

(f) Technical data (as defined in § 120.21 of this subchapter) and defense services (as defined in § 120.8 of this subchapter) related to the defense articles enumerated in paragraphs (a) through (e) of this category. (See § 125.4 of this subchapter for exemptions; see also § 123.21 of this subchapter). Technical data directly related to the manufacture or production of any defense articles enumerated elsewhere in this category that are designated as Significant Military Equipment (SME) shall itself be designated as SME.

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CATEGORY XV—SPACECRAFT SYSTEMS AND ASSOCIATED EQUIPMENT

* (a) Spacecraft, including satellites, specifically designed or modified for military use.

(b) Remote sensing satellite systems as follows:

* (1) All Remote sensing satellites;

(2) Ground control stations for remote sensing satellites as follows:

(i) Ground control stations for telemetry, tracking and control of such satellites; or

(ii) Passive ground stations for remote sensing satellites having any of the following characteristics:

(A) Employing any of the cryptographic items controlled under Category XIII of this subchapter; or

(B) Employing any uplink command capability.

NOTE: For export licensing controls over any passive ground receive only stations for remote sensing satellites not having any of the above parameters nor any systems or major components controlled elsewhere under this subchapter, see the Commerce Control List.

* (c) Military communications satellites or multi-mission satellites (including commercial communications satellites having additional, non-communication mission(s) or payload(s) controlled under this subchapter but not including ground stations and their associated equipment and technical data not enumerated elsewhere in § 121.1 of this subchapter; for controls on such ground stations see the Commerce Control List).

(d) Global Positioning System (GPS) receiving equipment specifically designed, modified or configured for military use; or GPS receiving equipment with any of the following characteristics:

(1) Designed for encryption or decryption (e.g., Y-Code) of GPS precise positioning service (PPS) signals;

(2) Designed for producing navigation results above 60,000 feet altitude and at 1,000 knots velocity or greater;

(3) Specifically designed or modified for use with a null steering antenna or including a null steering antenna designed to reduce or avoid jamming signals;

(4) Designed or modified for use with unmanned air vehicle systems capable of delivering at least a 500 kg payload to a range of at least 300 km.

(NOTE: GPS receivers designed or modified for use with military unmanned air vehicle systems with less capability are considered

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to be specifically designed, modified or configured for military use and therefore covered under this paragraph (d)(4).)

Any GPS equipment not meeting this definition is subject to the jurisdiction of the Department of Commerce (DOC). Manufacturers or exporters of equipment under DOC jurisdiction are advised that the U.S. Government does not assure the availability of the GPS P-Code for civil navigation. It is the policy of the Department of Defense (DOD) that GPS receivers using P-Code without clarification as to whether or not those receivers were designed or modified to use Y-Code will be presumed to be Y-Code capable and covered under this paragraph. The DOD policy further requires that a notice be attached to all P-Code receivers presented for export. The notice must state the following: "ADVISORY NOTICE: This receiver uses the GPS P-Code signal, which by U.S. policy, may be switched off without notice."

(e) Systems, components, parts, accessories, attachments, and associated equipment (including ground support equipment) specifically designed, modified or configured for the articles in paragraphs (a) through (d) of this category, except as provided in paragraph (c).

(f) The following individual systems, components or parts (except when included in a commercial communications satellite licensed under ECCN 9A004a of the Export Administration Regulations):

(1) Anti-jam systems with the ability to respond to incoming interference by adaptively reducing antenna gain (nulling) in the direction of the interference.

(2) Antennas:

(i) With aperture (overall dimension of the radiating portions of the antenna) greater than 30 feet; or

(ii) With all sidelobes less than or equal to -35dB, relative to the peak of the main beam; or

(iii) Designed, modified, or configured to provide coverage area on the surface of the earth less than 200 nautical miles in diameter, where "coverage area" is defined as that area on the surface of the earth that is illuminated by the main beam width of the antenna (which is the angular distance between half power points of the beam).

(3) Intersatellite data relay links that do not involve a ground relay terminal ("cross-links").

(4) Spaceborne regenerative baseband processing equipment.

(5) Radiation-hardened microelectronic circuits that are specifically designed or rated to meet or exceed all five of the following characteristics:

(i) A total dose of 5×10^5 Rads (SI);

(ii) A dose rate upset of 5×10^8 Rads (SI)/Sec;

(iii) A neutron dose of 1×10^{14} N/cm²;

(iv) A single event upset of 1×10^{-7} or less error/bit/day;

(v) Single event latch-up free and having a dose rate latch-up of 5×10^8 Rads(SI)/sec or greater.

(6) Propulsion systems which permit acceleration of the satellite on-orbit (i.e., after mission orbit injection) at rates greater than 0.1g.

(7) Attitude control and determination systems designed to provide spacecraft pointing determination and control or payload pointing system control better than 0.02 degrees per axis.

(8) Orbit transfer engines ("kick-motors") which are embedded in the spacecraft. Orbit transfer engines which are not embedded in the spacecraft are controlled under Category IV of this subchapter (except as noted in the note for this paragraph (f)). Here "embedded" means that the device or system cannot feasibly be removed from the spacecraft and cannot be used for other purposes.

(9) Cryptographic items described in Category XIII(b)(1)(x) of this subchapter.

NOTE: Commercial communications satellites are subject to Commerce Licensing jurisdiction even if they include the individual munitions list systems, components or parts identified in paragraph (f) of this category. In all other cases, these systems, components or parts remain on the USML except non-embedded, solid propellant orbit transfer engines ("kick motors") are subject to Commerce licensing jurisdiction (and not controlled under this subchapter) when they are to be utilized for a specific commercial communications satellite launch, provided the solid propellant "kick motor" being utilized is not specifically designed or modified for military use or capable of being restarted after achievement of mission orbit (such orbit transfer engines are always controlled under Category IV of this subchapter). Technical data (as defined in § 120.10 of this subchapter) and defense services (as defined in § 120.9 of this subchapter) related to the systems, components, or parts referred to in

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paragraph (f) of this category are always controlled under this subchapter, even when the satellite itself is licensed by the Department of Commerce.

(g) Technical data (as defined in § 120.10 of this subchapter) and defense services (as defined in § 120.9 of this subchapter) directly related to paragraphs (a) through (f) of this category. (See § 125.4 for exemptions.) Technical data directly related to the manufacture or production of any defense articles enumerated elsewhere in this category that are designated as Significant Military Equipment (SME) shall itself be designated SME. In addition, detailed design, development, production or manufacturing data for all spacecraft systems and for specifically designed or modified components for all spacecraft systems, regardless of which U.S. Government agency has jurisdiction for export of the spacecraft. (See § 125.4 for exemptions.) This coverage by the U.S. Munitions List of detailed design, development, manufacturing or production information directly related to satellites which are not otherwise under the control of this section does not include that level of technical data (including marketing data) necessary and reasonable for a purchaser to have assurance that a U.S.-built item intended to operate in space has been designed, manufactured and tested in conformance with specified contract requirements (e.g., operational performance, reliability, lifetime, product quality, or delivery expectations), as well as data necessary to evaluate in-orbit anomalies and to operate and maintain associated ground equipment.

NOTE 1: All defense services and technical assistance for satellites and/or launch vehicles, including compatibility, integration, or processing data, is controlled under this subchapter. Technical data provided to the launch provider (form, fit, function, mass, electrical, mechanical, dynamic/environmental, telemetry, safety, facility, launch pad access, and launch parameters) for commercial communications satellites that describe the interfaces for mating and parameters for launch (e.g., orbit, timing) of the satellite is under Commerce jurisdiction.

NOTE 2: The international space station, being developed, launched and operated under the supervision of the National Aeronautics and Space Administration, is con-

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trolled for export purposes under the Export Administration Regulations.

CATEGORY XVI—NUCLEAR WEAPONS DESIGN AND TEST EQUIPMENT

*(a) Any article, material, equipment, or device which is specifically designed or modified for use in the design, development, or fabrication of nuclear weapons or nuclear explosive devices. (See § 123.21 of this subchapter and Department of Commerce Export Regulations, 15 CFR part 778).

*(b) Any article, material, equipment, or device which is specifically designed or modified for use in the devising, carrying out, or evaluating of nuclear weapons tests or any other nuclear explosions, except such items as are in normal commercial use for other purposes.

(c) Technical data (as defined in § 120.21 of this subchapter) and defense services (as defined in § 120.8 of this subchapter) directly related to the defense articles enumerated in paragraphs (a) through (b) of this category. (See § 125.4 of this subchapter for exemptions.) Technical data directly related to the manufacture or production of any defense articles enumerated elsewhere in this category that are designated as Significant Military Equipment (SME) shall itself be designated SME.

CATEGORY XVII—CLASSIFIED ARTICLES, TECHNICAL DATA AND DEFENSE SERVICES NOT OTHERWISE ENUMERATED

*(a) All articles, technical data (as defined in § 120.21 of this subchapter) and defense services (as defined in § 120.8 of this subchapter) relating thereto which are classified in the interests of national security and which are not otherwise enumerated in the U.S. Munitions List.

CATEGORY XVIII—[RESERVED]

CATEGORY XIX—[RESERVED]

CATEGORY XX—SUBMERSIBLE VESSELS, OCEANOGRAPHIC AND ASSOCIATED EQUIPMENT

*(a) Submersible vessels, manned or unmanned, tethered or untethered, designed or modified for military purposes, or powered by nuclear propulsion plants.

*(b) Swimmer delivery vehicles designed or modified for military purposes.

(c) Equipment, components, parts, accessories, and attachments specifically designed or modified for any of the articles in paragraphs (a) and (b) of this category.

(d) Technical data (as defined in § 120.21 of this subchapter) and defense services (as defined in § 120.8 of this subchapter) directly related to the defense articles enumerated in paragraphs (a) through (c) of this category. (See § 125.4 of this subchapter for exemptions.) Technical data directly related to the

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manufacture or production of any defense articles enumerated elsewhere in this category that are designated as Significant Military Equipment (SME) shall itself be designated as SME.

CATEGORY XXI—MISCELLANEOUS ARTICLES

(a) Any article not specifically enumerated in the other categories of the U.S. Munitions List which has substantial military applicability and which has been specifically designed or modified for military purposes. The decision on whether any article may be included in this category shall be made by the Director of the Office of Defense Trade Controls.

(b) Technical data (as defined in § 120.21 of this subchapter) and defense services (as defined in § 120.8 of this subchapter) directly related to the defense articles enumerated in paragraphs (a) of this category.

[58 FR 39287, July 22, 1993, as amended at 58 FR 47638, Sept. 10, 1993; 58 FR 60115, Nov. 15, 1993; 59 FR 46548 and 46549, Sept. 9, 1994; 59 FR 47800, Sept. 19, 1994; 61 FR 56895, Nov. 5, 1996; 61 FR 68633, Dec. 30, 1996]

§ 121.2 Interpretations of the U.S. Munitions List and the Missile Technology Control Regime Annex.

The following interpretations (listed alphabetically) explain and amplify the terms used in § 121.1. These interpretations have the same force as if they were a part of the U.S. Munitions List (USML) category to which they refer. In addition, all the items listed in § 121.16 shall constitute all items on the United States Munitions List which are Missile Technology Control Regime Annex items in accordance with section 71(a) of the Arms Export Control Act.

§ 121.3 Aircraft and related articles.

In Category VIII, *aircraft* means aircraft designed, modified, or equipped for a military purpose, including aircraft described as “demilitarized.” All aircraft bearing an original military designation are included in Category VIII. However, the following aircraft are not included so long as they have not been specifically equipped, re-equipped, or modified for military operations:

(a) Cargo aircraft bearing “C” designations and numbered C-45 through C-118 inclusive, C-121 through C-125 inclusive, and C-131, using reciprocating engines only.

(b) Trainer aircraft bearing “T” designations and using reciprocating engines or turboprop engines with less than 600 horsepower (s.h.p.)

(c) Utility aircraft bearing “U” designations and using reciprocating engines only.

(d) All liaison aircraft bearing an “L” designation.

(e) All observation aircraft bearing “O” designations and using reciprocating engines.

§ 121.4 Amphibious vehicles.

An *amphibious vehicle* in Category VII(f) is an automotive vehicle or chassis which embodies all-wheel drive, is equipped to meet special military requirements, and which has sealed electrical systems or adaptation features for deep water fording.

§ 121.5 Apparatus and devices under Category IV(c).

Category IV includes but is not limited to the following: Fuzes and components specifically designed, modified or configured for items listed in that category, bomb racks and shackles, bomb shackle release units, bomb ejectors, torpedo tubes, torpedo and guided missile boosters, guidance systems equipment and parts, launching racks and projectors, pistols (exploders), ignitors, fuze arming devices, intervalometers, thermal batteries, hardened missile launching facilities, guided missile launchers and specialized handling equipment, including transporters, cranes and lifts designed to handle articles in paragraphs (a) and (b) of this category for preparation and launch from fixed and mobile sites. The equipment in this category includes robots, robot controllers and robot end-effectors specially designed or modified for military applications.

§ 121.6 Cartridge and shell casings.

Cartridge and shell casings are included in Category III unless, prior to export, they have been rendered useless beyond the possibility of restoration for use as a cartridge or shell casing by means of heating, flame treatment, mangling, crushing, cutting, or popping.